549 | 179 - 189
182
186 max

CLAIMS:

1. A surface mode liquid crystal device comprising a layer of nematic liquid crystal having viscosity coefficients η_1, η_2 and γ_1 such that $(\eta_1-\eta_2)/\gamma_1 \geq 1.15$ or $(\eta_1-\eta_2)/\gamma_1 \leq 0.9$.

2. A surface mode liquid crystal device comprising a layer of nematic liquid crystal having viscosity coefficients η_1, η_2 and γ_1 such that $(\eta_1-\eta_2)/\gamma_1 \geq 1.15$ or $(\eta_1-\eta_2)/\gamma_1 \leq 0.9$ at a temperature such that the liquid crystal is at least 5°C away from a transition to another phase.

3. A device as claimed in claim 2, in which the other phase is a smectic phase.

Smectic

A 4. A device as claimed in claim 1 ~~in any one of the preceding claims~~, in which the liquid crystal shows a nematic phase at at least one temperature in the range 0-60°C.

A 5. A device as claimed ~~in any one of the preceding claims~~ claim 1, in which the nematic liquid crystal has an underlying smectic phase.

A 6. A device as claimed in ~~any one of claims 1 to 4,~~ claim 1 in which the liquid crystal layer comprises a polymer network formed by polymerisation of a polymerisable material with the layer cooled to a temperature at which the nematic liquid crystal has a smectic phase.

A 7. A device as claimed in ~~any one of the preceding claims~~ claim 1, in which the liquid crystal has positive dielectric anisotropy and is disposed between first and second alignment layers providing substantially parallel alignment and a pretilt less than 45°.

AAPA

AAPA 8. A device as claimed in claim 7, in which the pretilt is less than 10°.

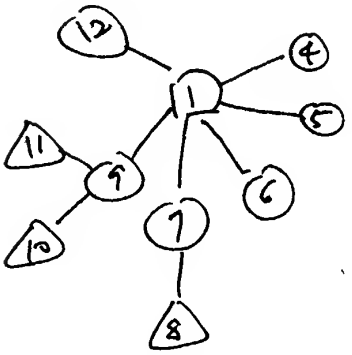
A 9 A device as claimed in ~~any one of the claims 1 to 6~~ claim 1, in which the liquid crystal has negative dielectric anisotropy and is disposed between first and second alignment layers providing substantially parallel alignment and a pretilt greater than 45°.

AAPA

10. A device as claimed in claim 9, in which the pretilt is greater than 80°.

11. A device as claimed in claim 9 ~~or 10~~, in which $(\eta_1-\eta_2)/\gamma_1<0$.

12. A display comprising a device as claimed in ~~any one of the preceding claims~~ claim 1.



APPENDIX - - Amendment Version With Markings to Show Changes Made

Claims 4-7, 9, 11 and 12 have been amended as follows:

4. (Amended) A device as claimed in [any one of the preceding claims] claim 1, in which the liquid crystal shows a nematic phase at at least one temperature in the range 0-60°C.

5. (Amended) A device as claimed in [any one of the preceding claims] claim 1, in which the nematic liquid crystal has an underlying smectic phase.

6. (Amended) A device as claimed in [any one of] claim[s] 1 [to 4], in which the liquid crystal layer comprises a polymer network formed by polymerisation of a polymerisable material with the layer cooled to a temperature at which the nematic liquid crystal has a smectic phase.

7. (Amended) A device as claimed in [any one of the preceding claims] claim 1, in which the liquid crystal has positive dielectric anisotropy and is disposed between first and second alignment layers providing substantially parallel alignment and a pretilt less than 45°.

9. (Amended) A device as claimed in [any one of the claims 1 to 6] claim 1, in which the liquid crystal has negative dielectric anisotrophy and is disposed between first and second alignment layers providing substantially parallel alignment and a pretilt greater than 45°.

11. (Amended) A device as claimed in claim 9 [or 10], in which $(\eta_1-\eta_2)/\gamma_1<0$.

12. (Amended) A display comprising a device as claimed in [any one of the preceding claims] claim 1.